TRENDS IN FOOD SCIENCE & TECHNOLOGY

Author Index

Subject Index

Books Reviewed Index

1996

Vol. 7
Issues 1–12

ISSN 0924 2244

Trends in Food Science & Technology

Elsevier Trends Journals
68 Hills Road
Cambridge
UK CB2 1LA
Tel: +44 1223 315961
Fax: +44 1223 464430
+44 1223 321410
E-mail: TIFS@elsevier.co.uk

Advisory Editorial Board

Soichi Arai, University of Tokyo, Japan
Yasuo Ariyoshi, Ajinomoto Co. Inc., Japan
Ken Buckle, University of New South Wales, Australia
Osvaldo Campanella, Massey University, New Zealand
Fergus M. Clydesdale, University of Massachusetts, USA
David Farr, Nestec Ltd, Switzerland
Patrick F. Fox, University College, Cork, Ireland
Daniel Y.C. Fung, Kansas State University, USA
Pavel Jelen, University of Alberta, Canada
J. Leighton Jones, Campden & Chorleywood Food RA, UK
Dietrich Knorr, Berlin University of Technology, Germany
Theodore P. Labuza, National Food and Nutrition Consultants, USA
Stephen H. McNamara, Hyman, Phelps & McNamara, PC, USA
Victor J. Morris, Institute of Food Research, UK
Barbara Munce, Consultant, Australia
Ann Noble, University of California, Davis, USA
Thomas Ohlsson, Swedish Institute for Food Research
John R. Piggott, University of Strathclyde, UK
Syed S.H. Rizvi, Cornell University, USA
Andrew O. Scott, Lyons-Tetley Ltd, UK
Bruce P. Wasserman, Rutgers University, USA
Peter J. Wood, Agriculture Canada

Editor Beverley White

Assistant Editor Rosemary Boddington

Editorial Administrators Anne Ward and Lesley Ward

Publisher Peter Desmond

© 1997 Elsevier Science Ltd. All rights reserved.

This journal and the individual contributions contained in it are protected by the copyright of Elsevier Science Ltd. Except as outlined in the terms and conditions, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the Publisher, Elsevier Trends Journals, 68 Hills Road, Cambridge UK CB2 1LA.

Author Index

(BR): Book Review
(CR): Conference Report
(Ed.): Editorial
(L): Letter

A

Abel, D.C., *see* Sporns, P. 187
Ackman, R.G., *Fish Oil: Technology, Nutrition and Marketing* 310 (BR)
Adlof, R.O., *see* Warner, K. 275 (BR)
Ahvenainen, R., New approaches in improving the shelf life of minimally processed fruit and vegetables 179
An, H., Peters, M.Y. and Seymour, T.A., Roles of endogenous enzymes in surimi gelation 321
Andrews, W.H., AOAC INTERNATIONAL's three validation programs for methods used in the microbiological analysis of foods 147
Archer, D.L., Preservation microbiology and safety: Evidence that stress enhances virulence and triggers adaptive mutations 91
Astwood, J.D. and Fuchs, R.L., Preventing food allergy: Emerging technologies 219
Awad, A., *Sucrose: Properties and Applications* 102 (BR)

B

Baker, R.A. and Wicker, L., Current and potential applications of enzyme infusion in the food industry 279
Beauchamp, G.K., Basic flavour research and the food industry 457
Bell, G.A., Molecular mechanisms of olfactory perception: Their potential for future technologies 425
Belton, P., *Characterization of Food: Emerging Methods* 341 (BR)
BeMiller, J.N., *Food Polysaccharides and Their Applications* 207 (BR)
Bidlack, W.R., *Nutrition, Food and the Environment* 103 (BR)
Birch, G.G., Towards an improved understanding of sweetener synergy 403
Blanchfield, J.R.
Food science and technology on the Internet 1
BSE on the World Wide Web 204 (L)
Bonnarme, P., *see* Feron, G. 285
Bortlik, K., *see* Wissgott, U. 298
Bošković, M.A., *Encapsulation and Controlled Release of Food Ingredients (ACS Symposium Series 590)* 274 (BR)
Bower, C.K., McGuire, J. and Daeschel, M.A., The adhesion and detachment of bacteria and spores on food-contact surfaces 152
Breslin, P.A.S., Interactions among salty, sour and bitter compounds 390
Britten, P., *see* Iwaoka, W.T. 105

C

Cauvain, S.P., *Frozen & Refrigerated Doughs and Batters* 309 (BR)
Cavin, C., see Schilter, B. 327
Chirife, J., ISOPOW VI 333 (CR)
Christie, W.W., *Lipid Analysis* 384 (BR)
Cleland, A.C., Package design for refrigerated food: The need for multidisciplinary project teams 269
Colmenero, F.J., Technologies for developing low-fat meat products 41
Coupland, J.N. and McClements, D.J., Lipid oxidation in food emulsions 83
Crittenden, R.G. and Playne, M.J., Production, properties and applications of food-grade oligosaccharides 353

D

Daeschel, M.A., *see* Bower, C.K. 152
De Cordt, S., *see* Van Loey, A. 16
de Ruig, W.G., Characterizing and optimizing analytical method quality 234
Dejmek, P., *Food Processing: Recent Developments* 277 (BR)
Delwiche, J.F., Are there 'basic' tastes? 411
Dexter, J.E. and Wood, P.J., Recent applications of debranning of wheat before milling 35
Donald, A., *see* Richmond, P. 371
Dong, F.M., *see* Iwaoka, W.T. 105
Dossena, A., *see* Marchelli, R. 113
Durand, A., *see* Feron, G. 285

E

Emmett, S.E., The European Food Intolerance Databanks Project 313
Etzel, M.R., *A Basic Introduction to Separation Science* 208 (BR)

F

Feron, G., Bonnarme, P. and Durand, A., Prospects for the microbial production of food flavours 285
Floros, J.D., *Food Packaging and Preservation* 69 (BR)
Flowerdew, D.W., *Food Law and Quality Improvement in Central and Eastern European Countries* 101 (BR)
Frazier, P., *see* Richmond, P. 371 (CR)
Fuchs, R.L., *see* Astwood, J.D. 219
Fuke, S. and Ueda, Y., Interactions between umami and other flavour characteristics 407

G

García-Carreño, F.L., Proteinase inhibitors 197
Geisen, R., *see* Schillinger, U. 158
Gorris, L.G.M., 2nd European Symposium on Sous Vide 303 (CR)
Green, B.G., Chemesthesis: Pungency as a component of flavour 415
Griffiths, W., *Food Phenolics: Sources, Chemistry, Effects, Applications* 243 (BR)
Guinard, J-X. and Mazzucchelli, R., The sensory perception of texture and mouthfeel 213
Gunasekaran, S., Computer vision technology for food quality assurance 245
Gunstone, F.D., *Bailey's Industrial Oil & Fat Products, Volume 1, Edible Oil & Fat Products: General Applications (5th edn)* 379 (BR)
Gurr, M.I., *Nutrition, Lipids, Health and Disease* 276 (BR)

H

Haentjens, T., *see* Van Loey, A. 16
Hamaker, B.R., *Sorghum and Millets: Chemistry and Technology* 101 (BR)
Hartel, R.W., Ice crystallization during the manufacture of ice cream 315
Hayakawa, K., *see* Linko, Y-Y. 59
Heaton, J.W. and Marangoni, A.G., Chlorophyll degradation in processed foods and senescent plant tissues 8
Hegarty, P.V., *The Concise Encyclopedia of Foods & Nutrition* 244 (BR)
Hendrickx, M., *see* Van Loey, A. 16
Henrikson, F.W., Food Processing Automation Conference IV 96 (CR)
Hermansson, A-M. and Svegmark, K., Developments in the understanding of starch functionality 345

Ho, C-T., *Methods to Assess Quality and Stability of Oils and Fat-containing Foods* 176 (BR)
Hofmann, T., *Savory Flavors* 342 (BR)
Holzapfel, W.H., *see* Schillinger, U. 158
Holzhäuser, D., *see* Schilter, B. 327
Huggett, A.C., *see* Schilter, B. 327

I

Illingworth, D., *Handbook of Milkfat Fractionation Technology and Applications* 32 (BR)
Iwaoka, W.T., Britten, P. and Dong, F.M., The changing face of food science education 105

J

Jägerstad, M., *The Scientific Basis for Vitamin Intake in Human Nutrition* 380 (BR)
Jelen, P.
Nordic Milk Protein Conference 171 (CR)
see Rattray, W. 227
Jinks, A., *see* Laing, D.G. 387
Jones, J.L., *see* Smith, D.B. 126

K

Karlsson, H.O.E. and Trägårdh, G., Applications of pervaporation in food processing 78
Kilara, A., *see* Panyam, D. 120

L

Laing, D.G. and Jinks, A., Flavour perception mechanisms 387
Larsen, L.M., *Enzymatic Browning and Its Prevention (ACS Symposium Series 600)* 344 (BR)
Law, B.A., *Food Enzymes: Structure and Mechanisms* 176 (BR)
Leonard, J.J., *see* Schaub, S.M. 263
Lewis, M., *Maillard Reactions in Chemistry, Food and Health* 31 (BR)
Li-Chan, E.C.Y., The applications of Raman spectroscopy in food science 361
Linforth, R.S.T., *see* Taylor, A.J. 444
Linko, Y-Y. and Hayakawa, K., Docosahexaenoic acid: A valuable nutraceutical? 59
Lloyd-Evans, L.P.M.
The Language of Biotechnology: A Dictionary of Terms (2nd edn) 144 (BR)
Genetically Modified Foods: Safety Aspects (ACS Symposium Series 605) 383 (BR)

M

Marangoni, A.G., *see* Heaton, J.W. 8
Marchelli, R., Dossena, A. and Palla, G., The potential of enantioselective analysis as a quality control tool 113
Mawson, J., *Fouling and Cleaning in Pressure Driven Membrane Processes* 243 (BR)
Mazzucchelli, R., *see* Guinard, J-X. 213
McCarthy, M.J., *Magnetic Resonance in Food Science* 209 (BR)
McClements, D.J., *see* Coupland, J.N. 83
McGuire, J., *see* Bower, C.K. 152
Mielle, P., 'Electronic noses': Towards the objective instrumental characterization of food aroma 432
Mottram, D.S., *see* Taylor, A.J. 373 (CR)

N

Nijhuis, H.H., *see* Starmans, D.A.J. 191
Noble, A.C., Taste–aroma interactions 439

O

Osawa, T., *see* Ramarathnam, N. 64 (CR)

P

Palla, G., *see* Marchelli, R. 113
Panyam, D. and Kilara, A., Enhancing the functionality of food proteins by enzymatic modification 120
Perera, C.O., *Fruit Processing* 309 (BR)
Peters, M.Y., *see* An, H. 321
Peumans, W.J. and Van Damme, E.J.M., Prevalence, biological activity and genetic manipulation of lectins in foods 132
Playne, M.J., *see* Crittenden, R.G. 353
Preston, S.D., Thermal conductivity standards for foods 240 (L)
Prosky, L., *Dietary Fiber In Health and Disease* 178 (BR)

Q

Querol, A. and Ramón, D., The application of molecular techniques in wine microbiology 73

R

Ramarathnam, N. and Osawa, T., International Conference on Food Factors: Chemistry and Cancer Prevention 64 (CR)
Ramón, D., *see* Querol, A. 73
Rattray, W. and Jelen, P., Protein standardization of milk and dairy products 227
Regester, G.O., *Heat-Induced Changes in Milk (2nd edn)* 207 (BR)
Reilly, C.
Too much of a good thing? The problem of trace element fortification of foods 139
Biotechnology: Science and the Consumer 336 (CR)
Richmond, P., Donald, A. and Frazier, P., Starch Structure and Function 371 (CR)
Roddick, J.G., *see* Smith, D.B. 126
Roller, S., *Enzymes in Food Processing (2nd edn)* 382 (BR)

S

Schaub, S.M. and Leonard, J.J., Composting: An alternative waste management option for food processing industries 263
Schellekens, M., New research issues in sous-vide cooking 256
Schillinger, U., Geisen, R. and Holzapfel, W.H., Potential of antagonistic microorganisms and bacteriocins for the biological preservation of foods 158
Schilter, B., Holzhäuser, D., Cavin, C. and Huggett, A.C., An integrated *in vivo* and *in vitro* strategy to improve food safety evaluation 327
Scott, A., *Beverages: Technology, Chemistry and Microbiology* 70 (BR)
Seymour, T.A., *see* An, H. 321
Sheldon Green, P., *Crisis Management in the Food and Drinks Industry: A Practical Approach* 381 (BR)
Silva, J.L., Novel Technologies and Ingredients in Foods 26 (CR)
Singh, P.C. and Singh, R.K., Choosing an appropriate bioseparation technique 49
Singh, R.K., *see* Singh, P.C. 49
Sleigh, R., *Egg Science and Technology (4th edn)* 341 (BR)
Sloof, M., Tijskens, L.M.M. and Wilkinson, E.C., Concepts for modelling the quality of perishable products 165
Smith, D.B., Roddick, J.G. and Jones, J.L., Potato glycoalkaloids: Some unanswered questions 126
Sporns, P. and Abel, D.C., MALDI mass spectrometry for food analysis 187
Starmans, D.A.J. and Nijhuis, H.H., Extraction of secondary metabolites from plant material: A review 191
Svegmark, K., *see* Hermansson, A-M. 345
Swinbank, A., *The Food System: A Guide* 145 (BR)

T

Taylor, A.J. and Linforth, R.S.T., Flavour release in the mouth 444
Taylor, A.J. and Mottram, D.S., 8th Weurman Flavour Research Symposium 373 (CR)
Teff, K.L., Physiological effects of flavour perception 448
Tijskens, L.M.M., *see* Sloof, M. 165
Tobback, P., *see* Van Loey, A. 16
Tolstoguzov, V., *Protein Functionality in Food Systems (IFT Basic Symposium Series 9)* 31 (BR)
Trägårdh, G., *see* Karlsson, H.O.E. 78
Tuorila, H., Hedonic responses to flavour and their implications for food acceptance 453

U
Ueda, Y., *see* Fuke, S. 407

V
Van Damme, E.J.M., *see* Peumans, W.J. 132
Van Loey, A., Hendrickx, M., De Cordt, S., Haentjens, T. and Tobback, P., Quantitative evaluation of thermal processes using time–temperature integrators 16
Vasavada, P.C., *Shelf Life Evaluation of Foods* 69 (BR)

W
Walsh, G., *Biotechnology in Animal Feeds and Animal Feeding* 210 (BR)
Walters, D.E., How are bitter and sweet tastes related? 399
Warner, K. and Adlof, R.O., *New Trends in Lipid and Lipoprotein Analyses* 275 (BR)
Webster, F.H., *The Oat Crop: Production and Utilization* 343 (BR)
White, B., Flavour perception: From basic research to industrial applications 386 (Ed.)
Whitehead, I.M., *Aroma Biotechnology* 177 (BR)
Wicker, L., *see* Baker, R.A. 279
Wilde, P.J., *Food Macromolecules and Colloids* 211 (BR)
Wilkinson, E.C., *see* Sloof, M. 165
Winter, C.K., *Biomarkers in Food Chemical Risk Assessment* 379 (BR)
Wissgott, U. and Bortlik, K., Prospects for new natural food colorants 298
Withers, P.M., Ultrasonic, acoustic and optical techniques for the non-invasive detection of fouling in food processing equipment 293
Wood, P.J., *see* Dexter, J.E. 35

X
Xiong, Y.L., *Meat and Meat Products: Technology, Chemistry and Microbiology* 144 (BR)

Z
Zhang, Q.H., *New Methods of Food Preservation* 177 (BR)

Subject Index

(BR): Book Review
(CR): Conference Report
(Ed.): Editorial
(L): Letter

A

acceptability
  hedonic responses 453
  natural colorants 98
  perishable products 165
  texture and mouthfeel 213
  see also quality control
accreditation of analytical methods 147, 236
acidity, *see* sourness
acoustic sensors, fouling detection 293
active packaging 185
adaptive mutation, bacteria 91
adenosine monophosphate (AMP) 407
adhesion, bacterial 152
agricultural economics 145 (BR)
alcoholic beverages 70 (BR)
  dealcoholization 78
  enantioselective quality control 118
  see also wine
algae, docosahexaenoic acid source 59
allergy
  databanks 313
  prevention 219
D-amino acids, process markers 113
AMP (adenosine monophosphate) 407
amylopectin 345
amylose 345
analytical techniques 277 (BR), 341 (BR)
  bioseparation 49
  enantioselective 113
  flavour release analysis 375 (CR), 444
  in vitro/in vivo safety evaluation 327
  lipid analysis 384 (BR)
  magnetic resonance imaging 209 (BR)
  MALDI mass spectrometry 187
  optimization 234
  see also imaging, microbiological analysis, sensors, sensory analysis, spectroscopy
anaphylaxis, prevention 219
animal feeds, *see* feedstuffs
animal production, biotechnology 337 (CR)
animal testing 327
antagonistic microorganisms in preservation 158, 257
anticarcinogens, phenolic compounds 243 (BR)
antimicrobials 27 (CR)
  biofilm prevention 155
antimutagens 64 (CR)
antinutrients, *see* toxicology
antioxidants
  fat-soluble 276 (BR)
  lipid oxidation retardation 87
  phenolic compounds 243 (BR)
  plant flavonoids 65 (CR)
  vitamins 380 (BR)
AOAC International's analytical validation programmes 147
aqueous biphasic systems 49
aromas
  analysis 432
  binding and release 375 (CR), 444
  biotechnology 177 (BR)
  concentration 78
  extraction from cell culture 285
  extraction from plants 191
aroma perception 387, 425, 432, 439, 457
  'electronic noses' 427, 432
  taste–aroma interactions 439
  see also flavour perception
artificial mouth 445
assigned quality, perishable products 165
astringency, *see* sourness, trigeminal stimuli
automation of food processing 96 (CR)
  see also sensors
azeotropic mixtures, dewatering 78

B

bacteria
  adhesion 152
  virulence, stress-enhanced 91
bacteriocins 156
bakery foods, *see* doughs, batters
basic tastes 386 (Ed.), 403, 411
batters 309 (BR)
benzaldehyde 288
beverages 70 (BR)
  oligosaccharides in 353
  see also alcoholic beverages, wine
bifidobacteria, probiotic 354
bioactive peptides in milk 171 (CR)
biofilm formation 152
biomarkers
  chemical risk assessment 379 (BR)
  of processing 113
bioseparation, *see* separation techniques
biotechnology 144 (BR)
  animal feeds 210 (BR)
  aroma production 177 (BR)
  consumer information 336 (CR)
  dictionary 144 (BR)
  food allergens 224
  see also enzymes, genetic modification, microbial production
bitter taste
  relationship with sweet taste 399
  removal from citrus peel 281
  taste interactions 390
bovine spongiform encephalopathy, *see* BSE
bran removal, wheat 35
browning
  enzymatic 344 (BR)
  inhibition 183
  Maillard reaction 31 (BR)
BSE, World Wide Web resources 204 (L)

C

cancer prevention 64 (CR)
  biomarkers of carcinogenesis 379 (BR)
  fibre 178 (BR)
  proteinase inhibitors 200
capsaicin, desensitization 417
carbohydrates, Raman spectroscopy 367
  see also cereals, starch, sugars
carbonation 217, 415
carcinogenesis, *see* cancer prevention
casein 171 (CR)
cephalic-phase reflexes 449
cereals 101 (BR)
  waste processing 267
  see also individual varieties
chaconine 127
chart on flavour perception 422
cheese, protein standardization 233
chemesthesis, *see* trigeminal stimuli
chilled food, packaging design 269
chirality
  basis for quality control 113
  of flavours 117, 374 (CR)
chlorophyll degradation 8
chromatography 54
citrus fruit, peeling 281
cleaning
  biofilm removal 154
  fruit and vegetables 182
  in pressure-driven membrane processes 243 (BR)
coagulation enhancement, proteins 122
collaborative learning 105
collaborative study, validation method 147
colloids 207 (BR), 211 (BR)
colorants, natural 298
colour assessment, *see* machine vision
colour change, vegetables 8
composting 263
computer vision, *see* machine vision
conductivity standards, thermal 240 (L)
Conference Reports
  Biotechnology: Science and the Consumer 336
  2nd European Symposium on Sous Vide 303
  Food Processing Automation Conference IV 96
  International Conference on Food Factors 64

ISOPOW IV 333
Nordic Milk Protein Conference 171
Novel Technologies and Ingredients in Foods 26
Starch Structure and Function 371
8th Weurman Flavour Research Symposium 373
consumer information, biotechnology 336 (CR)
consumer preferences
flavours 453
role of quality 165
textures 218
controlled-release of ingredients 274 (BR)
co-operative learning 105
creaminess 216
crisis management, industrial 381 (BR)
crispness 216
critical thinking 105
crystallization control, ice cream 315
cyclodextrins 359

D
dairy processing
cleaning 243 (BR)
non-invasive fouling detection 293
dairy products
milk, heat-induced changes 207 (L)
milkfat 32 (BR)
milk protein 171 (CR)
protein standardization 227
see also milk
data analysis 324
databases
food intolerances 313
food science information 3
dealcoholization, alcoholic beverages 78
debittering, citrus peel 281
debranning, wheat 35
defence protein, lectin 132
degradation, chlorophyll 8
desensitization 417
deterioration 69 (BR)
see also rancidity, spoilage
dewatering, azeotropic mixtures 78
DHA, *see* docosahexaenoic acid
dictionary, biotechnology 144 (BR)
diet and health 103 (BR)
cancer control 64 (CR), 200
fibre 39, 178 (BR)
fish oils 310 (BR)
lipid oxidation 83, 276 (BR)
starch 371 (CR)
trace element fortification 139
vitamin intake 380 (BR)
see also functional foods, RDAs, nutrition
docosahexaenoic acid (DHA) 59
doughs 309 (BR)
drying 334 (CR)
durum wheat, debranning 35

E
eating, flavour release during 444
economics, agricultural 145 (BR)
edible films 185
edible oils, extraction 82
education, food science 105
eggs 341 (BR)
electronic noses 427, 432
electrophoresis 54
emulsification enhancement, proteins 123
emulsions 211 (BR)
lipid oxidation 83
enantiomers, *see* chirality
encapsulation 274 (BR)
encyclopaedia, food and nutrition 244 (BR)
endogenous enzymes, surimi gelation 199, 322
enhancement
sweetener mixtures 403
taste mixtures 390
taste–aroma interactions 439
enzymatic browning 344 (BR)
in fruit and vegetables 179
enzymatic modification of proteins 120
enzymatic protein hydrolysis 197
enzymes 176 (BR), 382 (BR)
infusion 279
odorant-degrading 430
surimi gelation 199, 321
equipment, *see* process equipment
essential fatty acids, docosahexaenoic 59
essential oils, extraction from plants 191
ethics, biotechnology 336 (CR)
EU law 101 (BR)
European Food Intolerance Databanks 313
extraction 55, 208 (BR)
flavours 285
secondary metabolites 191

F
fats 379 (BR)
analysis in foods 176 (BR)
milkfat fractionation 32 (BR)
reduction in meat products 41
see also lipids, oils
fatty acids, docosahexaenoic 59
feedstuffs
biotechnology 210 (BR)
oats 343 (BR)
fermentation, *see* microbial production, wine
fibre
health role 178 (BR)
wheat debranning by-product 38
firmness
improvement by enzyme infusion 282
perception 217
fish oils 310 (BR)
source of docosahexaenoic acid 59
fish processing
proteinase inhibitors 199, 325
surimi gelation 199, 321
waste composting 266
flavonoids, health benefits 65 (CR)
flavour binding and release 375 (CR), 444
flavour chemistry 31 (BR), 375 (CR)
flavour perception 386 (Ed.), 387, 422, 457
basic research 386 (Ed.), 457
chart of mechanisms 422
chemesthesis 415
in mouth 444
physiological effects of 448
preferences 453
taste–aroma interactions 388, 439
see also aroma perception, taste perception
flavours 373 (CR)
chiral components 117, 374 (CR)
enzyme infusion 279
microbial production 285
savoury 342 (BR)
see also aromas, flavour perception
flour milling 35
foam-based separation 55
foaming enhancement, proteins 123
fortification, trace elements 139
fouling
biofilms 152
in pressure-driven membrane processes 243 (BR)
non-invasive detection 293
Fourier transform Raman spectroscopy 363
fractionation, milkfat 32 (BR)
fragrances, extraction 191
freezing 334 (CR)
crystallization in ice cream 315
frozen foods
doughs and batters 309 (BR)
packaging design 269
fruit
chlorophyll degradation 8
enzyme infusion 279
minimal processing 179
processing 309 (BR)
quality modelling 165
waste composting 265
fruitiness, effect on sweetness 441
fruit juices 70 (BR)
functional foods 65 (CR)
see also diet and health, nutrition
functionality, *see* protein functionality, starch functionality

G
G-protein-coupled receptors 399, 408
gas sensors 427, 432
gelation
enhancement, proteins 122
starch 346
surimi 321
whey proteins 173 (CR)
genetic modification
allergen-containing foods 219
consumer education 336 (CR)
lectin-containing foods 132
milk proteins 228
pest-resistant plants 200
potato starch 351
safety 383 (BR)
wine yeasts 73
see also biotechnology
glass transitions 335 (CR)
glutamates 407
glycoalkaloids 126, 189
GMP (guanosine monophosphate) 407

grains
waste composting 267
see also cereals
granules, starch 345, 372 (CR)
guanosine monophosphate (GMP) 407
gums, *see* colloids

H
HACCP (hazard analysis and critical control points) 256
harmonization
European food laws 101 (BR)
labelling 141
see also legislation
health, *see* diet and health
heat treatment, milk 207 (BR)
hedonic responses 448, 453
high-pressure treatment 335 (CR)
hot foods, *see* trigeminal stimuli
hydrocolloids 207 (BR), 211 (BR)
hypoallergenic foods 225

I
ice cream, ice crystallization 315
imaging
computer-vision systems 97 (CR), 245
magnetic resonance 209 (BR)
see also analytical techniques
immunodiagnostics, allergens 221
IMP (inosine monophosphate) 407
in vitro safety evaluation 327
in vivo safety evaluation 327
industry–academic collaboration 457
ingredients
delivery 274 (BR)
novel 26 (CR)
inosine monophosphate (IMP) 407
insect resistance, *see* pest resistance
Institute of Food Science and Technology, Internet resource 2, 204 (L)
insulin 449
inter-laboratory studies, optimizing quality 234
inter-species data extrapolation, risk assessment 329
Internet resources, *see* World Wide Web
intolerance 313
see also allergy
irritants, *see* trigeminal stimuli
isoelectric precipitation techniques 53
ISOPOW IV conference 333 (CR)

J
journal writing 105

K
kinesthetic characteristics of foods 213
koku flavour 410

L
labelling, trace elements 141
lactic acid bacteria, bacteriocins 158
lactones 117, 285
lactosucrose 356
lactulose 355
lectins 132
legislation
Central and Eastern Europe 101 (BR)
colorants 298
health claims 141
sous-vide cooking 259, 303 (CR)
see also harmonization
legumes
source of lectins 132
source of proteinase inhibitors 201
lipids 379 (BR)
analysis 275 (BR), 384 (BR)
oxidation 61, 83, 276 (BR)
Raman spectroscopy 366
reduction, meat products 41
see also fats, oils
lipoproteins, analysis 275 (BR)
liquid membrane separation technique 50
low-fat meat products 41

M
machine vision 97 (CR), 245
macromolecules 211 (BR)
magnetic resonance imaging 209 (BR)
see also NMR
mailing lists, electronic 3
Maillard reaction 31 (BR)
MALDI mass spectrometry 187
masking
bitter tastes 399
in taste mixtures 390
mass spectrometry
MALDI-MS 187
of breath volatiles 446
meat products
composting processing wastes 266
low-fat 41
microbiology 144 (BR)
mechanoreceptors 213
membrane-based separation 51
fouling 243 (BR)
pervaporation 78, 195
micellar systems, lipid oxidation 84
microbial contamination
enantioselective markers 114
of food-contact surfaces 152
of fruit and vegetables 180
see also safety
microbial production
colorants 301
docosahexaenoic acid (DHA) 61
flavours 285, 374 (CR)
microbial stress 91
microbiological analysis 27 (CR)
beverages 70 (BR)
meat and meat products 144 (BR)
sous-vide cooking 256
validation 147
wine 73
see also analytical techniques
microfiltration, cleaning 243 (BR)
micronutrient labelling 141
microscopy of starches 347
microwave heating for metabolite extraction 195
milk, heat-induced changes 207 (BR)
milkfat fractionation 32 (BR)
milk processing, cleaning 243 (BR)
milk protein 171 (CR)
standardization 227
millets 101 (BR)
milling, debranning wheat 35
minerals, *see* trace elements
minimally processed produce 179
mitochondrial DNA restriction analysis, yeast populations 74
mixture interactions in flavour perception
bitter and sweet 399
odours 427
salty and umami 407
salty, sour and bitter 390
sweeteners 401, 403
taste–odour 388, 439
terminology 390
modelling
process control 97 (CR)
quality of perishable products 165
moderate-vacuum packaging 185
modified-atmosphere packaging 185
monitoring, *see* quality control
monosodium glutamate (MSG) 390, 407
mood and food intake 448, 457
mouth, artificial 445
mouthfeel 213
MSG (monosodium glutamate) 390, 407
mycotoxinogenic fungi, inhibition 158

N
nanofiltration, cleaning 243 (BR)
natural colorants 298
neural response, flavours 448
nisin
biofilm prevention 156
food preservation 158
NMR (nuclear magnetic resonance) 209 (BR), 341 (BR)
nociception 416
non-enzymatic browning, *see* Maillard reaction
non-invasive detection, fouling 293
novel ingredients and technologies 26 (CR)
safety 337 (CR)
wheat debranning by-products 38
nuclear magnetic resonance (NMR) 209 (BR), 341 (BR)
nucleation, in ice cream 315
nucleotides 407
nutrient metabolism 448, 457
nutrient retention 261
nutrition 103 (BR)
docosahexaenoic acid (DHA) 59
encyclopaedia 244 (BR)
fish oils 310 (BR)
lipids 276 (BR)
milk proteins 229
oats 343 (BR)
vitamin intake 380 (BR)
see also diet and health, functional foods, RDAs

O
oats 343 (BR)
odorant-binding proteins 429
odour perception, *see* aroma perception
oils 379 (BR)
analysis 176 (BR)

extraction by pervaporation 82
fish 310 (BR)
see also fats, lipids
olfactory perception, *see* aroma perception
oligosaccharides 353
on-line control, *see* automation
optical sensors, fouling detection 293
oral texture 213
organic waste, composting 263
oxidation, lipids 61, 83, 276 (BR)

P

packaging 69 (BR)
minimally processed foods 184
refrigerated foods 269
sous-vide cooking 304 (CR)
parasympathetic nervous system 449
pasta, debranned 37
pathogenic bacteria
stress-enhanced virulence 91
see also microbial contamination, safety
pearling, wheat 35
pectinase infusion, citrus peeling 281
peeling
citrus fruits 281
fruit and vegetables 182
peer-verified validation mechanisms 149
perishable products, *see* fruit, vegetables
pervaporation 78, 195
pest resistance
lectins 132
proteinase inhibitors 197
β-phenethyl alcohol 289
phenolics 243 (BR)
pheophorbide degradation, plants 8
physiology, interaction of flavour with 448, 457
phytochemicals, cancer prevention role 64 (CR)
see also cancer prevention
pigments, *see* chlorophyll, natural colorants
polymeric films, packaging 69 (BR)
polyphenyloxidase 344 (BR)
polysaccharides 207 (BR), 211 (BR)
polyunsaturated fatty acids, docosahexaenoic (DHA) 59
population dynamics in wine yeasts 73
potato
glycoalkaloids 126, 189
starch 349
prebiotic oligosaccharides 354
precipitation techniques 52
preferences, *see* consumer preferences
preservation 69 (BR), 177 (BR)
increased bacterial virulence 91
using antagonistic microorganisms 158
see also shelf life, individual techniques
pressure, *see* high-pressure treatment
pressure-assisted enzyme infusion 280
probiotic bifidobacteria 354
problem-solving techniques 105
process control, *see* automation
process equipment
design, biofilm prevention 156
fouling detection 293
sous-vide cooking 303 (CR)
see also sensors
processing 277 (BR)
evaluation tools 16
fruit 309 (BR)
novel methods 26 (CR)
sous-vide cooking 303 (CR)
production technology, consumer guide 145 (BR)
protein functionality 31 (BR), 211 (BR)
enhancement by enzymatic modification 120
in dairy products 171 (CR)
in low-fat meats 43
proteinase inhibitors 197, 321
proteins
hydrolysis 124, 197
purification 49
Raman spectroscopy 364
standardization in milk 227
structure, milk 171 (CR)
psychophysics 213
psychorheology 218
PUFA, docosahexaenoic acid (DHA) 59
pungency, *see* trigeminal stimuli
purification techniques 54

Q

quality assurance
machine vision systems 97 (CR), 245
using electronic noses 432
see also quality assurance, risk assessment, safety
quality control
oils and fat-containing foods 176 (BR)
optimizing analytical methods 234
perishable products, modelling 165
sous-vide cooking 304 (CR)
using enantiomeric ratios 113
see also quality assessment, risk assessment, safety

R

racemization, *see* chirality
Raman spectroscopy 361
rancidity 8
see also deterioration, spoilage
RDAs 103 (BR)
trace elements 139
vitamins 380 (BR)
see also diet and health, nutrition
recombinant DNA technology
allergens 219
wine yeasts 73
see also biotechnology, genetic modification
recommended dietary allowances, *see* RDAs
refrigeration
doughs and batters 309 (BR)
packaging design 269
regulation, *see* legislation
research, basic 386 (Ed.), 457
retrogradation, starch 346
retronasal perception 440
reverse osmosis membranes, cleaning 243 (BR)
reversed micellar separation 50
rheology
human perception of 213
of starch 345, 371 (CR)
risk assessment
biomarkers 379 (BR)
in vivo/in vitro evaluation 327
see also quality control, safety

S

Saccharomyces cerevisiae, wine fermentation 73
safety
Central and Eastern European legislation 101 (BR)
consumer 336 (CR)
enhanced bacterial virulence 91
genetically modified food 383 (BR)
in vivo/in vitro evaluation 327
sous-vide cooking 303 (CR)
see also microbial contamination, quality assurance, risk assessment, toxicology
salting-out techniques 53
salt reduction 410, 457
salty taste, perception and interactions 390
savoury flavours 342 (BR), 407
seafood, underutilized resources 199
see also fish processing
senescence, plant tissue 8
sensors 96 (CR), 341 (BR)
electronic noses 427, 432
for thermal processing 16
fouling detection 293
see also machine vision
sensory analysis 213, 411, 444, 453
sensory benefits, sous-vide cooking 261, 304
sensory perception, *see* flavour perception, texture
separation techniques 49, 191, 208 (BR)
shelf life
evaluation 69 (BR)
fresh produce 179
sous-vide products 259
see also preservation
simulation, *see* modelling
smell, *see* aroma
smoothness 216
sodium, *see* salt
soft drinks 70 (BR)
solanine 127
Solanum tuberosum, *see* potato
solid-state fermentation 285
solubility enhancement, proteins 121
solvent extraction 191
sorghum 101 (BR)
sourness
manipulation 457
taste interactions 390
sous-vide cooking 256, 303 (CR)
spectroscopy 341 (BR)
Raman 361
see also mass spectrometry
spices 342 (BR)

spoilage 69 (BR)
biofilms 152
sous-vide cooking 259
see also deterioration, rancidity
spore adhesion 153
stability, oils and fat-containing foods 176 (BR)
standard methods, optimizing quality 147, 235
standardization, proteins 227
standards, thermal conductivity 240 (L)
starch functionality 345, 371 (CR)
steam extraction 192
stress-enhancement, bacterial virulence 91
structure–function relationships 341 (BR)
enzymes 176 (BR)
food proteins 31 (BR), 124, 171 (CR)
starch 345, 371 (CR)
sugars 102 (BR)
see also sweeteners
supercritical fluid extraction 55, 191
suppression
in bitter–sweet taste mixtures 399
in sweetener mixtures 403
in taste mixtures 390
surfaces, food-contact, bacterial adhesion 152
surimi production 199, 321
sweeteners 400, 403
sweetness
effect on fruitiness 441
relationship with bitterness 399
synergy 401, 403
see also sugars, sweeteners
synergy
in sweeteners 401, 403
in taste mixtures 390
in umami compounds 407

T

tactile characteristics of foods 213, 417
taste perception 387
basic tastes 386 (Ed.), 403, 411
bitterness 390, 399
saltiness 390
sourness 390
sweetness 399, 403
thresholds 390
umami (savoury) 342 (BR), 407
see also flavour perception, mixture interactions
taste primaries, *see* basic tastes
temperature, effect on flavour 417
temperature sensors, time–temperature integrators (TTIs) 16
test kits, validation 149
texture 213
modification by enzyme infusion 279
thermal conductivity standards 240 (L)
thermal processes
conductivity standards 240 (L)
quantitative evaluation 16
time–intensity sensory analysis 444
time–temperature integrators (TTIs) 16
toxicology
biomarkers 379 (BR)
in vivo/in vitro evaluation 327
lectins 132
potato glycoalkaloids 126
proteinase inhibitors 197, 321
trace elements 139
trace element fortification 139
transgenics, *see* genetic modification
transglutaminase, surimi gelation 324
transport packaging 269
trigeminal stimuli 271, 387, 415, 457
TTIs (time–temperature integrators) 16

U

UHT processing plants, fouling 293
ultracentrifugation 52
ultrafiltration
cleaning 243 (BR)
protein standardization 227
ultrahigh-temperature processing plants, fouling 293
ultrasonic sensors, fouling detection 293
umami 342 (BR), 407

V

vacuum-assisted infusion, enzymes 280
vacuum cooking, *see* sous-vide cooking
validation of analytical methods 147, 234
see also analytical techniques, quality control, quality assurance
vanillin 287
vegetables
chlorophyll degradation 8
enzyme infusion 279
minimally processed 179
quality modelling 164
waste composting 265
see also potato
vibrational spectroscopy 361
virulence, bacterial, stress-enhanced 91
vision sensors, *see* machine vision
vitamins
antioxidant 89
recommended intake 380 (BR)
retention, sous-vide cooking 261
see also nutrition
volatiles, *see* aroma compounds

W

waste management, composting 263
water
ice crystallization 315
Raman spectroscopy 368
roles in foods 333 (CR)
water binding, role in sweet taste perception 403
water-holding capacity
low-fat meats 43
proteins 122
Weurman Flavour Research Symposium 373 (CR)
wheat
debranning 35
starch 347
whey proteins 172 (CR)
wine microbiology 73
see also alcoholic beverages
World Wide Web
BSE information 204 (L)
food science information 1
writing-to-learn techniques 105

Y

yeast population dynamics, winemaking 73
yoghurt, oligosaccharides in 353

Books Reviewed Index

A

Arthey, D. and Ashurst, P.R., eds, *Fruit Processing* 309

B

Belton, P.S., Delgadillo, I., Gil, A.M. and Webb, G.A., eds, *Magnetic Resonance in Food Science* 209

Berger, R.G., *Aroma Biotechnology* 177

C

Crews, H.M. and Hanley, A.B., eds, *Biomarkers in Food Chemical Risk Assessment* 379

D

Dendy, D.A.V., ed., *Sorghum and Millets: Chemistry and Technology* 101

Dickinson, E. and Lorient, D., eds, *Food Macromolecules and Colloids* 211

Doeg, C., *Crisis Management in the Food and Drinks Industry: A Practical Approach* 381

E

Engel, K-H., Takeoka, G.R. and Teranishi, R., eds, *Genetically Modified Foods: Safety Aspects (ACS Symposium Series 605)* 383

Ensminger, A.H., Ensminger, M.E., Konlande, J.E. and Robson, J.R.K., eds, *The Concise Encyclopedia of Foods & Nutrition* 244

F

Fox, P.F., ed., *Heat-induced Changes in Milk (2nd edn)* 207

G

Gaonkar, A.G., ed.
Food Processing: Recent Developments 277
Characterization of Food: Emerging Methods 341

Gould, G.W., ed., *New Methods of Food Preservation* 177

H

Hamilton, R.J. and Rice, R.D., eds, *Fish Oil: Technology, Nutrition and Marketing* 310

Hegarty, V., *Nutrition, Food and the Environment* 103

Hemming, F.W. and Hawthorne, J.N. *Lipid Analysis* 384

Hettiarachchy, N.S. and Ziegler, G.R., eds, *Protein Functionality in Food Systems (IFT Basic Symposium Series 9)* 31

Hui, Y.H., ed., *Bailey's Industrial Oil & Fat Products, Volume 1, Edible Oil & Fat Products: General Applications (5th edn)* 379

I

International Dairy Federation, ed., *Fouling and Cleaning in Pressure Driven Membrane Processes* 243

K

Kaylegian, K.E. and Lindsay, R.C., *Handbook of Milkfat Fractionation Technology and Applications* 32

Kritchevsky, D. and Bonfield, C., eds, *Dietary Fiber In Health and Disease* 178

Kulp, K., Lorenz, K. and Brümmer, J., eds, *Frozen & Refrigerated Doughs and Batters* 309

L

Labuza, T.P., Reineccius, G.A., Monnier, V., O'Brien, J. and Baynes, J., eds, *Maillard Reactions in Chemistry, Food and Health* 31

Lee, C.Y. and Whitaker, J.R., eds, *Enzymatic Browning and Its Prevention (ACS Symposium Series 600)* 344

M

Man, C.M.D. and Jones, A.A., eds, *Shelf Life Evaluation of Foods* 69

Mathlouthi, M., ed., *Food Packaging and Preservation* 69

Mathlouthi, M. and Reiser, P., eds, *Sucrose: Properties and Applications* 102

N

Nagodawithana, T.W., *Savory Flavors* 342

O

Ong, A.S.H., Niki, E. and Packer, L., eds, *Nutrition, Lipids, Health and Disease* 276

P

Polish Food Technologists' Society, ed., *Food Law and Quality Improvement in Central and Eastern European Countries* 101

R

Risch, S.J. and Reineccius, G.A., eds, *Encapsulation and Controlled Release of Food Ingredients (ACS Symposium Series 590)* 274

S

Sebedio, J-L. and Perkins, E.G., eds, *New Trends in Lipid and Lipoprotein Analyses* 275

Setford, S.J., *A Basic Introduction to Separation Science* 208

Shahidi, F. and Naczk, M., *Food Phenolics: Sources, Chemistry, Effects, Applications* 243

Stadelman, W.J. and Cotterill, O.J., eds, *Egg Science and Technology (4th edn)* 341

Stephen, A.M., ed., *Food Polysaccharides and Their Applications* 207

T

Tansey, G. and Worsley, T., *The Food System: A Guide* 145

Tucker, G.A. and Woods, L.F.J., eds, *Enzymes in Food Processing (2nd edn)* 382

V

Varnam, A.H. and Sutherland, J.P.
Beverages: Technology, Chemistry and Microbiology 70
Meat and Meat Products: Technology, Chemistry and Microbiology 144

W

Walker, J.M. and Cox, M., *The Language of Biotechnology: A Dictionary of Terms (2nd edn)* 144

Wallace, R.J. and Chesson, A., eds, *Biotechnology in Animal Feeds and Animal Feeding* 210

Walter, P., ed., *The Scientific Basis for Vitamin Intake in Human Nutrition* 380

Warner, K. and Eskin, N.A.M., eds, *Methods to Assess Quality and Stability of Oils and Fat-containing Foods* 176

Welch, R.W., ed., *The Oat Crop: Production and Utilization* 343

Wong, D.W.S., *Food Enzymes: Structure and Mechanisms* 176

Just the tip of the iceberg...

http:
//www.
elsevier.com/
locate/tto

TECHNICAL
TIPS ONLINE

http://www.elsevier.com/locate/tto
In Europe http://www.elsevier.nl/locate/tto

...log-on today and search the depths.

NEW from Elsevier Trends Journals

Technical Tips Online - a database of techniques information for the life scientist.

http://www.elsevier.com/locate/tto

In Europe http://www.elsevier.nl/locate/tto

TECHNICAL
TIPS ONLINE

E L S E V I E R T R E N D S J O U R N A L S

AMERICAS: Elsevier Science, Regional Sales Office, Customer Support Department, 655 Avenue of the Americas, New York, NY 10010, USA Tel: +1 (212) 633 3730 Fax: +1 (212) 633 3680 E-mail: usinfo-f@elsevier.com EUROPE/ROW: Elsevier Science, Regional Sales Office, Customer Support Department, PO Box 211, 1000 AE Amsterdam, The Netherlands Tel: +31 (20) 485 3757 Fax: +31 (20) 485 3432 E-mail: nlinfo-f@elsevier.nl SINGAPORE (ASIA PACIFIC EXCEPT JAPAN): Elsevier Science, Regional Sales Office, Customer Support Department, No. 1 Temasek Avenue, #17-01 Millenia Tower, Singapore 039192 Tel: +65 336 9338 Fax: +65 337 2230 E-mail: asiainfo@elsevier.com.sg JAPAN: Elsevier Science, Regional Sales Office, Customer Support Department, 9–15 Higashi-Azabu, 1-chome, Minato-ku, Tokyo 106, Japan. Tel: +81 (3) 5561 5033 Fax: +81 (3) 5561 5047 E-mail: kyf04035@niftyserve.or.jp

ELSEVIER TRENDS JOURNALS